

Application No. 10/065,016
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Examiner: L. Cruz
Art Unit: 2841

Amendments to the Specification

[0014] ~~In accordance with a first aspect of the present invention there is provided a printed circuit board as claimed in Claim 1.~~ An integrated circuit package device according to the invention has a plurality of contact points, including an inner portion of the contact points and an outer portion of the contact points. In accordance with a first aspect of the invention, the integrated circuit package device has the contacts arranged according to one or more of the following arrangements:

(i) a majority of power supply contacts configured substantially in an extremity of the outer portion;

(ii) a majority of timing or frequency contacts configured substantially in the outer portion; and/or

(iii) a majority of data or high speed signal contacts configured substantially in an inner side of the outer portion.

[0015] ~~In accordance with a second aspect of the present invention, there is provided an integrated circuit package device, as claimed in Claim 5.~~ In another aspect of the invention, ground contacts are further provided along a bisectonal axis through the outer portion to facilitate a ground path from outside an area of the integrated circuit package device to the inner portion. At least one ground contact is configured substantially in the inner portion. Preferably, the inner portion is formed substantially of ground contact points to effect a ground plane. For one or more signals associated with the three arrangements, all of the respective contacts are configured in the respective manner described in those arrangements. The inner portion and the outer portion can be two distinct regions separated by a space.

[0016] ~~In accordance with a third aspect of the present invention, there is provided an electrical or electronic device, as claimed in Claim 9.~~ In a further aspect of the invention, a printed circuit board according to the invention has a plurality of tracks for operably coupling electrical signals to a plurality of contact points of one or more integrated circuit package devices, where the plurality of contact points includes an inner portion and an outer portion. The printed circuit board has one or more of the following arrangements:

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(i) a majority of power supply contacts configured substantially in an extremity of the outer portion;

(ii) a majority of timing or frequency contacts configured substantially in the outer portion; and/or

(iii) a majority of data or high speed signal contacts configured substantially in an inner side of the outer portion.

[0017] ~~Further aspects of the invention are as claimed in the dependent claims.~~ For the printed circuit board, ground contacts can be further provided along a bisectonal axis, through the outer portion to facilitate a ground path from outside an area of an integrated circuit package device to the inner portion. At least one ground contact is configured substantially in the inner portion. The inner portion is preferably formed substantially of ground contact points to effect a ground plane. Here, for one or more of the signals associated with the arrangements, all of the respective contacts of the integrated circuit package device are configured in the respective manner described in those arrangements. The inner portion and the outer portion can be two distinct regions separated by a space.

[0018] ~~In summary, the present invention proposes inter alia, to arrange the positioning of an IC package's interface ports/contact points to facilitate an easier, more accurate and more reliable printed circuit board layout. In a further aspect of the invention, there is provided an electrical or electronic device comprising the integrated circuit package device or the printed circuit board described above.~~

[0041] Such topographies are dependent upon the shape and configuration of the IC to be incorporated onto the PCB and may, for example, comprise concentric circles, a substantially circular IC package layout, a substantially rectangular IC package layout, etc. ~~As such, it will be appreciated that the inventive concepts of the present invention are not limited to the contacts being provided in inner and outer regions.~~